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14. ABSTRACT Leadership has always been the foundation of military discipline, decision-making, and victory. This paper ties together leadership and the principles of war through mental models and their applications to revolutions in military affairs, specifically network centric warfare. In doing so this paper explores, via academic thought and real-world examples, some the pitfalls of wrongful applications of mental models as they apply to the principles of war. In light of the dynamic changes network centric warfare proposes to bring to the battlefield, this paper also offers a balanced and sensible approach to operational and strategic leaders alike in the examination and restructuring of our 'enduring bedrock' of military doctrine. Two principles of war, mass and unity of command, are scrutinized under the above criteria, and the concept of will is introduced as an integral part of leadership and argued to be included in future principles of war.					
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**NAVAL WAR COLLEGE
Newport, RI**

Leadership and the Principles of War

By

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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Abstract

Leadership has always been the foundation of military discipline, decision-making, and victory. This paper ties together leadership and the principles of war through mental models and their applications to revolutions in military affairs, specifically network centric warfare. This paper explores, through academic thought and real-world examples, some the pitfalls of the wrongful applications of mental models as they apply to the principles of war. In light of the dynamic changes network centric warfare proposes to bring to the battlefield, this paper also offers a balanced and sensible approach to operational and strategic leaders alike in the examination and restructuring of our 'enduring bedrock' of military doctrine. Two principles of war, mass and unity of command, are scrutinized under the above criteria, and the concept of will is introduced as an integral part of leadership and argued to be included in future principles of war.

Table of Contents

Introduction	1
Interactive Relationship	3
Mental Models	4
The Role of Leadership	6
Network Centric Warfare	9
Mass	11
Unity of Command	12
Will	14
Conclusion	16
Bibliography	18

“War is a matter of vital importance to the State; the province of life or death; the road to survival or ruin. It is mandatory that it be studied thoroughly”¹

INTRODUCTION

The ancient Chinese warrior Sun Tzu considered the study of warfare so important that he made it his first statement to any serious student pursuing a higher degree of learning in the endless human endeavor of armed and violent conflict. Indeed, his wisdom has rung true throughout the ages to this very day, for warfare truly *is* of vital importance to any nation’s existence, and part of how doctrine has shaped its study and application is through the principles of war.

The origins of our currently published principles of war can be traced back to the days of Napoleon’s reign in Europe (although there is much evidence to indicate that he was well read in regards to the *Sunza Bingfa*, even employing its teachings, but never credited his victories accordingly)². Careful observers of his tactics, such as JFC Fuller, later attempted to codify certain trends in the employment of his forces. Marshal Ferdinand Foch, in his book The Principles of War, quoted Napoleon as stating, “The principles of war are those which have directed the great Commanders whose great deeds have been handed down to us by history.”³

With the handing down of history, then, did the current nine principles of war find their way into US Army doctrine in 1921⁴. Two revisions, one in 1939 and another in 1949⁵, allowed for minor, almost imperceptible, changes, and yet these principles of war have

¹ Sun Tzu. The Art of War. trans. (Samuel B. Griffith. London: Oxford University Press, 1963), 63.

² This statement is, of course, impossible to prove, as there is no way of knowing exactly how much original thought Napoleon put into his tactics, and how much was inspired (or copied) by the writings of Sun Tzu.

³ Ferdinand Foch, The Principles of War, trans. Hilaire Belloc, (New York: Henry Holt and Company, 1920), 9.

⁴ Russell W. Glenn, “No More Principles of War?” U.S. Army Parameters (Spring 1998): 48.

⁵ Ibid, 49.

supported the United States throughout two world wars, other regional wars, and numerous armed conflicts since their original inception. Today joint doctrine defines them as “warfighting [guides] at the strategic, operational, and tactical levels. They are the enduring bedrock of US military doctrine.”⁶

It should not go without notice that all of the wars and armed conflicts that the principles of war have guided the United States through since 1921 have had numerous revolutions in military affairs (RMA) that have changed the ways in which warfare was, and still is, conducted. The airplane, both propeller and jet propulsion types, is a prime example of this. Over the years, advances in rocketry, atomic sciences, computerized machinery, and target accuracy have changed the face of modern warfare, but their evolution has not drastically changed the principles of war, as these principles have endured through every phase of technological advances since the first World War. It is, rather, in how leadership has applied these principles in the light of the dynamic environment of war, and the changes that RMA brought to the battlefield, that has allowed for the success of these principles to be duly applied to each of these conflicts. These principles have proven their worth time and again to the leaders who knew how to use them. So, as leaders, we must bear the burden of evaluating the way in which we study, apply, and teach these principles of war to ensure future generations of the same opportunities for success in warfare that we enjoy today.

This paper ties together leadership and the principles of war through mental models and their applications to revolutions in military affairs, specifically, network centric warfare. In doing so, this paper will explore some of the pitfalls of wrongful applications of mental models as they apply to the principles of war and, in light of the dynamic changes network

⁶ U.S. Joint Chiefs of Staff, Doctrine for Joint Operations (JP 3-0), (Washington, D.C., September 10, 2001), A-1.

centric warfare proposes to bring to the battlefield, offers a balanced and sensible approach to operational and strategic leaders alike in the examination and restructuring of our ‘enduring bedrock’ of military doctrine. Let us begin, then, by asking ourselves three questions: Are the principles of war still applicable in today’s battlefield, or are they in need of change? If they are in need of change, what do we change about them? Finally, how do we ensure that we are providing our twenty-first century leaders with the best tools for the job?

“The best hope for successful warmaking lies in ensuring a detailed knowledge of the principles of war by all decision makers...combined with practical experience and positive working relationships between those same decisionmakers.”⁷

INTERACTIVE RELATIONSHIP

To be able to answer these questions, we must first understand what the principles of war represent to the modern-day leader, and how he/she will respond. Although human responses may vary in an infinite manner, they can be reasonably predictable in the package of a well-trained and thoroughly examined military officer, especially one who has been purposely placed in the trusted position of command. We must also understand that there is a relationship between the principles of war and the military commander that can be defined and understood through the use of mental models. The principles of war themselves represent a mental model of warfare to the leader. The leader is challenged to apply them in a given situation, he/she responds, and a relationship is created. The relationship, however,

⁷ David V. Nowlin, Roland J. Stupak, War as an Instrument of Policy: Past, Present, and Future, (University Press, Lanham, MD, 1998), 95.

does not remain static, and as more challenges to apply the principles (the mental model) present themselves, the leader continues to respond. It is important to understand this relationship, which is in essence the process of applying the principles of war, if we are to be serious about evaluating them for content and possible alteration.

“All our ideas and concepts are only internal pictures.”

-- Ludwig Boltzman (1899)⁸

MENTAL MODELS

What is a mental model? In simplistic form, it is an “...internal representation that humans develop of themselves and the objects they interact with in the world.”⁹ In other words, they are the way in which a person mentally views, or perceives, the environment around them. Literally, they are the filter through which the mind’s eye “sees”, and they shape our perceptions. More cognitive, and therefore more powerful, than a simple paradigm, mental models have a few key characteristics:

- Mental models include what a person thinks is true, not necessarily what is actually true.
- Mental models are similar in structure to the thing or concept they represent.
- Mental models allow a person to predict the results of his actions.
- Mental models are simpler than the thing or concept they represent. They include only enough information to allow accurate predictions.¹⁰

⁸ P.N. Johnson-Laird, et al., “Mental Models: A Gentle Guide For Outsiders”, 7 April 1998. <http://www.si.umich.edu/ICOS/gentleintro.html>, [23 March 2005], 1.

⁹ David H. Jonassen, “Operationalizing Mental Models: Strategies for Assessing Mental Models to Support Meaningful Learning and Design-Supportive Learning Environments”, n.d., <http://www.ittheory.com/jonassen2.html>, [2 April 2005], 3.

¹⁰ Scott McDaniel, “What’s Your Idea of a Mental Model?” 10 February 2003, Lkd. [Boxes and Arrows](http://boxesandarrows.com/archives/whats_your_idea_of_a_mental_model.php), http://boxesandarrows.com/archives/whats_your_idea_of_a_mental_model.php, [23 March 2005], 1.

In addition, "...the mind will construct mental models as a result of perception, imagination and knowledge, and the comprehension of discourse."¹¹ A simple example of this is the tale of three blind men who were put inside a cage next to an animal, allowed to feel with their hands only a certain part of the animal, and tasked with collectively drawing on their findings to discover what the animal truly was. One felt the long, tough, cylindrical nose and quickly exclaimed that they were put beside a snake. Another felt the horns and face and thought it was a giant warthog, and the third felt the legs and underbelly and told the others it was a small dinosaur. Each one thinking their view of the animal (their perception) was the only correct one, and that the others were somehow in error of their findings, trapped themselves within their own mental models, and collectively failed to surmise that the animal they were put beside was, indeed, an elephant.¹²

Even in Naval War College seminars today, students will be shown a map of the world and asked, "What do you see?" The Navy students will first take notice of the large, vast bodies of blue ocean that cover most of the map, failing to appreciate any of the detail of the land masses that come between them. The Army students will first see the layout of the familiar continents and scope of the terrain that occupy them, forgetting to recognize the sheer size of ocean masses or what it takes to occupy open water. And the Air Force will consider it in an entirely different way, taking into account strategic positions for launchings of air strikes, or the logistical implications of air mobility throughout the globe. That map of the world is interpreted by each military officer's mental model, and they see what their mental model tells them to see, in essence, what they've been trained to see.

¹¹ P.N. Johnson-Laird, et al., 1.

¹² This is my own example of a description of a mental model exercise.

But how does all of this apply to leadership, and how does it help us in evaluating the principles of war? As stated before, the principles of war are, by definition, a mental model of the conduct of warfare to today's (and tomorrow's) leader, and understanding this concept helps to bridge the gap between determining what the principles of war should be, and how they will be used by our leaders on the real-world, twenty-first century battlefield.

“A leader is a man who can adapt principles to circumstances.”

-- General George S. Patton¹³

THE ROLE OF LEADERSHIP

Leaders, at every level of the military organization, need to be cognizant of their roles and responsibilities towards the uses of the principles of war. In any military unit, operational leaders need to fully comprehend the fact that the principles of war do not represent an inflexible mental model of rigid doctrine that shall be followed to the letter without at least some interjection of his/her own experience or training. An operational leader must possess the “sense” that the application of such doctrine should not come in the form of a step-by-step checklist, but rather as a way of checking his/her own actions against that of the operational scenario. On this theme Foch reminds us that the principles of war are “[f]ixed principles to be applied in a variable way; according to circumstances, to each case which is always a particular one and has to be considered in [and of] itself.”¹⁴

¹³ U.S. Navy, Naval Leader Development Guide 2005, (Center for Naval Leadership, Norfolk, VA, 2004), 20.

¹⁴ Foch, 13.

At the same time, the principles of war should also not present themselves to the operational commander as a ‘fire and forget’ tool, in which he/she simply attempts to blindly apply one or more principles to a given situation and consider his/her tasking complete with the expectation that the given situation will now work out according to prescribed military doctrine. These types of thinking represent two of the many types of mental models of principles of war that can produce catastrophic results on the battlefield, and operational leaders must be aware of their potential to create harmful results. As stated in one Army periodical, “The principles of war have indeed been more robust than a narrow interpretation of their purpose would admit. Their application always demands careful consideration of the requirements unique to a given situation; with adaptation and exercise of the coup d’oeil so treasured by Clausewitz...”¹⁵

Strategic leaders’ attention towards the principles of war is in another realm, but not without its own pitfalls that must also be avoided. At the highest levels of leadership in any organization, author Peter Senge writes:

Many innovative ideas fail to be translated into meaningful strategic actions because these ideas are often at odds with the mental models prevailing in an organization. These mental models that hinder the acceptance of new insights are deeply ingrained internal images that [strategic leaders] working in a given organization tend to internalize unconsciously and often fail to adjust even though they are no longer relevant in a rapidly changing...environment. Thus, there exists an imperative need to study the mental model management, which basically involves the conscious monitoring, testing and improvement of the internal images that can greatly influence the manner that an organization’s [leaders] perceive the...environment in which they

¹⁵ Glenn, 48.

operate.¹⁶

In light of the fact that the highest levels of strategic leadership within the military will, in the spring and summer of this year, be reviewing (and possibly rewriting) the current principles of war, the awareness of common mistakes seen in any organization's upper echelon of decision makers is of the utmost importance.

I would, however, go even further in this warning to our military strategic leaders. I would submit that not only must we not allow ourselves to be bound by old ways of thinking, but we must also not allow ourselves to be swept away by current revolutions in military affairs, such as network centric warfare, that would propose to change the very nature of the battlefield and the way decisions are made at the operational level. Let us reflect on one example of proposed RMA-driven changes in warfare during the years following World War I, and observe how the mental modeling of one well-intending officer was in grave error:

The air power theories of General Giulio Douhet are an example of uncritically adopting technology as a panacea for solving the problems of modern warfare. General Douhet stated in 1928 that because an air war had never been fought, military history was useless. He believed it was not possible to use the lessons of the past wars to prepare for future war, because future war would be fought under dissimilar conditions. General Douhet further asserted that vision must be directed only to the future, and the future is determined solely by new technologies.

General Douhet's theories were based on the experiences of the positional war on the Western Front, but he grossly misread these experiences and oversimplified the problems associated with them, as well as the elements of war. His strategic thinking, was, in fact, disconnected from the reality of the times. He not only overestimated the boundaries of

¹⁶ Peter M. Senge, "Mental Models: Putting Strategic Ideas Into Practice", April 1992. <http://deming.eng.clemson.edu/pub/tqmbbs/tools-techs/menmodel.txt>, [2 April 2005], 1.

*air power technology but also underestimated the human psychological ability to endure the stress of long-range bombing.*¹⁷

It is clear that General Douhet's mental model of air power technology, and the revolution in military affairs that it would bring, impaired his vision of the future of warfare. His actions demonstrate a further element of mental models that sometimes befall decision makers, that is, "focusing". Focusing is "...the tendency for people (decision makers) to consider only what is represented in their mental models of a situation...they focus on what they have represented in their models of the options."¹⁸ This can have negative effects on an organization if key decision makers fall into the trap of 'focusing' on the latest revolutions in military affairs. More specifically, it can produce negative results for tomorrow's operational leaders if today's strategic leaders, in considering our current principles of war, trap themselves within their own mental models of network centric warfare.

*"Network Centric Warfare is about human
and organizational behavior"*¹⁹

NETWORK CENTRIC WARFARE

Network Centric Warfare has been advertised as an information-based Revolution in Military Affairs (RMA) that will change the way the military conducts the business of war, and proposes that a combination of technological advances in computerized information

¹⁷ Milan Vego, "New Doctrine Must Be Flexible and Dynamic", U.S. Naval Institute Proceedings (May 2003): 74.

¹⁸ P.N. Johnson-Laird, et al., 2,3.

¹⁹ David S. Alberts, John J. Garstka, Frederick P. Stein, Network Centric Warfare. Developing and Leveraging Information Superiority 2nd Edition (Revised) (Washington, D.C., August, 1999), 88.

systems, high-tech sensors, satellite-guided weaponry, and stealth technology will enable tactical, operational, and strategic commanders to “...see and understand everything on the battlefield, and if you see the battlefield, you will win the war.”²⁰ Sounds simple enough. Then-Vice Admiral Arthur Cebrowski, as President of the Naval War College, in one of his published “President’s Notes” from 1999, describes how the focus of warfare has moved from the industrial mode to the informational mode, and states that, “A new mental model for warfare is required, from the policy level to the tactical level...[w]e must change our mental model. Network-centric warfare is such a change.”²¹ Key elements of network centric warfare that seek to change the mental model of warfare include, but are not limited to:

- The shift in focus from the platform to the network
- The shift from viewing actors as independent to viewing them as part of a continuously adapting ecosystem
- The importance of making strategic choices to adapt or even survive in such changing ecosystems²²

One of the immediate changes we experience from this type of warfare, as seen in the first bullet, is felt at the operational commander’s level, and that is the shift from platform-based operations to effects-based operations. This wields the price tag of a very heavy reliance on the reliability, and infallibility, of the “network” to operate as advertised. Challenges of the interoperability of computer systems between all government agencies and common-service electronic architecture aside, certain elements of operational thinking and planning arise that affect the very core of our conduct of military operations in regards to the principles of war, in essence, our mental model. Let us, then, examine some of the principles that this

²⁰ Mackubin Thomas Owens, “Technology, the RMA, and Future War”, *Strategic Review* (Spring 1998), 67.

²¹ Arthur K. Cebrowski, “President’s Notes”, Naval War College, Autumn, 1999, <http://www.nwc.navy.mil/press/Review/1999/autumn/pn-a99.html>, [2 April, 2005], 1,2.

²² Arthur K. Cebrowski, John J. Garstka, “Network-Centric Warfare, its Origins and Future.” *U.S. Naval Institute Proceedings*, January 1998, 32.

information-based RMA has the potential to modify (or delete, as some would propose) and exercise our right to assess the situation.

MASS

The principle of mass, as defined by current military doctrine, is to “concentrate the effects of combat power at the most advantageous place and time to achieve decisive results.”²³ Network centric warfare proposes that through information superiority, the massing of forces is now not as important as the massing of effects, from which effects-based operations can be generated, and platform-specific purposes can be put aside by the operational commander. Although I would agree with the fact that information superiority will gain one side a definite advantage in knowing when and where to apply one’s forces, I would not be so quick to discard the concept of mass, as it is known to us now, from the operational commander’s toolbox. Information superiority may buy us an advantageous position in the employment of forces as they would be applied toward the principle of economy of force, but I would strongly argue that this should not take the place of mass, as this advantageous position may only be temporary, or nonexistent at all, a deception the enemy employs from the beginning. If it is temporary, and, during the due course of battle, the operational commander does not have platforms (ships, battalions, aircraft) to rely upon should the need arise for the defense of retreating forces (the ones put together for effects-based purposes), he/she may find out too late that they have just been painted into a corner. And what of the principle of mass as it applies to an enemy that is just as industrial, numerous, and capable as we are, perhaps in some ways even more so? Will the principle of

²³ U.S. Joint Chiefs of Staff, Doctrine for Joint Operations (JP 3-0), (Washington, D.C., September 10, 2001), A-1.

mass be something an operational commander would want should we go head-to-head with a nation such as China? Will our information superiority be “superior” enough to defeat them without the ability to concentrate our forces sans any informational capabilities?

We must keep in mind that in converting our mental model to a network centric one, while it may give us the opportunity to establish another venue of operational victory, also creates another critical vulnerability. Cyber warfare is not only on the minds of the U.S. military. Some other countries who could oppose us are privy to just as much technological advances as we are, and others can buy it. If we open ourselves up to the sole reliance on effects-based operations and do away with platform-specific warfare altogether, we may find ourselves out of effects-based options if our cyber-battlefield goes down. Do we have defensive measures ready for an attack on what would be our center of gravity, the network? Countering offensive strikes against our GPS satellites, or even satellite interference, would have to take the highest priority, almost assuredly to the detriment of our economy of force. I believe strongly that there are no shortcuts when it comes to the principle of mass on the battlefield, whether it be on land, on sea, or in the air. Although no one wants to see another war of attrition as has been encountered in the past, we must be prepared for it nonetheless. I am not stating that we should fight the next wars like we have the previous ones, but rather that the effective use of the principle of mass applies in any situation at any time, and although information superiority can be a great tool towards applying the concept of mass, it should not take its place in promoting effects, especially against an equal foe.

UNITY OF COMMAND

The principle of unity of command, as defined by current military doctrine, is to “ensure unity of effort under one responsible commander for every objective.”²⁴ Proponents of network centric warfare argue that a single commander slows down the process of decision making on the battlefield and breaks down the coordination and complementary efforts that would otherwise be possible. Since this concept of command is seen as an unnecessary road block, this principle should be replaced with unity of effort vice unity of command. One author even proposes that the “...information-based RMA will force our chain of command to function more like a network resulting in a more flattened and responsive command structure...challeng[ing] our current hierarchical concept of unity of command.”²⁵ This is part of the information dominance that, he says, “...will serve to lift the fog (of war) for the commander...”²⁶ I’m not so sure. The “flattening” of hierarchical structures may work in an economical, profit-based business for the purposes of garnishing a more efficient system or customer service performance, but when real Soldiers and Sailors, all either sons, husbands, daughters, or wives, are laying their lives on the line for their country, leadership is what drives them to do what they must do. The need for leadership everywhere in the military chain of command, from the tactical to the strategic level, is not only vital but absolutely necessary. Ours is not a business of profit, but of matters of national interest, going well beyond the scope of economical considerations. Taking a business-like approach to a non-business like affair is likened to skating on thin ice. Unity of effort is part of unity of command, they go hand-in-hand. Although authority can be delegated at all levels, responsibility and accountability cannot, and unity of effort will never replace the

²⁴ U.S. Joint Chiefs of Staff, Doctrine for Joint Operations (JP 3-0), A-1.

²⁵ Leonard G. Litton, “The Information-Based RMA and the Principles of War” Chronicles Online Journal, (6 Sept., 2000), <http://www.airpower.au.af.mil/airchronicles/cc/Litton.html>, [22 March, 2005], 7.

²⁶ *Ibid*, 5.

responsibility and accountability that the operational commander must have for the lives of every single person operating within his/her command.

This, I believe, is one of the real dangers of replacing unity of command with unity of effort. Where does the responsibility lie, not in just achieving the mission, but in the care and concern of the troops? Again, strategic leaders must remind themselves of the impact that these types of changes will have on the mental model of the principles of war on every echelon of command, especially on the unity of the tactical and operational commands. Unity of effort will always complement unity of command, but should never replace it. In war life and death decisions will have to be made at every level within the military, so ensuring a strong unity of command through a strong unity of effort must remain a top priority.

WILL

As of now there is no mention of what I consider to be Will, that is, the will power, or morale, or *esprit de corps*, of a fighting force. This concept is a direct result of a fighting force's leadership, at every level, but especially at the tactical level, and it is every leader's responsibility to ensure that it is there well before the fighting begins. Clausewitz mentions that in reckoning with an opposing force, that force is a product of two things: its Strength and its Will.²⁷ In mathematical terms, this is an easy equation:

$$\text{Force} = \text{Strength} \times \text{Will}$$

This explains why smaller forces have defeated larger forces at times in history, because the will of a particular armed force was a multiplier that tipped the scale in their favor. An

²⁷ Carl von Clausewitz, *On War*, ed. and translated by Michael Howard and Peter Paret. (Princeton, NJ: Princeton University Press, 1976), 77.

example from the twentieth century can be found in the first major war of that period, the Russo-Japanese War. The Japanese victory should have been no surprise to anyone who closely observed the preparation, readiness, and zeal to fight as could be found in the Japanese soldiers and sailors in 1904 and 1905. In essence, their will to win against a vastly overpowering enemy drove them to victory.

This type of force multiplier, I believe, should be an integral part of the principles of war because it strikes at the heart of what constitutes winning a war. First, the entity of Will is the fighting essence of the Soldiers, Sailors, and Airmen who put their lives on the line for their country. Second, it is the primary element of leadership that allows them to do it. Leaders must be aware of what it takes to do what they are put in place to do...lead. Making the principle of Will one of the main ingredients in the principles of war will not only bring about this awareness as they are being trained for future positions of leadership, but also reinforce this concept once they are on the battlefield. It would serve as a reminder of one of the many responsibilities that all leaders share in the care of their own troops. It would also help us to more fully assess our opponent's ability to wage war against us, allowing for better understanding of what it will take to defeat the enemy and how long the fighting might endure. The Russians erred by not doing this in 1904, and contributed to their own defeat.

A more balanced approach to incorporating current RMA into the principles of war would be to first consider not falling victim (as Douhet did) to a type of 'focusing' on what current RMA in theory may (but in reality may not) bring to the battlefield. Rather, we should keep in mind the big picture of both historical and modern warfare, remembering that the elements of human leadership will always play a key role. Using this as the framework for our mental model, it would be prudent to maintain our principles in their current state,

fully explaining their intent to all leaders, of their strategic, operational, and tactical relevance. In addition, the very important facet of the principle of Will should be added, as I believe it has been observed since the days of Sun Tzu, and will continue to stand the test of time. True leadership will always consider the principle of Will, leading naturally to the deduction that its inclusion in the principles of war would serve us well.

*“Good ideas are not adopted automatically. They must be
driven into practice with courageous patience.”*

-- Admiral Hyman Rickover²⁸

CONCLUSION

Leadership always has, and always will, play the key role in the training, implementation, and execution of the principles of war. Tactical and operational leaders must know when and how to apply them without falling into the traps that certain mental models would place them. Strategic leaders must maintain a true mental model of the real world of tactical and operational considerations before considering what changes they would make to the principles of war, especially changes that reflect modern-day RMA such as network centric warfare. Just as General Douhet’s air power theories would have thrown U.S. forces out of balance, so must we be aware of other RMA’s potential to do the same.

Strategic leaders must ensure that they do not ‘throw out the baby with the bath water’ when they meet this year to discuss the future role of the principles of war and their impact on operational effectiveness. I believe that network centric warfare can bring forth a

²⁸ U.S. Navy, Naval Leader Development Guide 2005, 28.

very rich and multi-dimensional aspect to future warfighting, with very positive results for us as a fighting force. But just as air power has its place in the scheme of war, so, I would suggest, should network centric warfare. General Douhet was wrong in his air power theories, but it did not mean that we would not benefit from air power in future wars. However, it took balance and perspective to achieve these positive results. If we take the same approach toward the type of information-based superiority that network centric warfare offers, perhaps network centric warfare will prove to be the same for us, certainly the potential is there. As always, we can be sure that time will reveal to us later what we can only imagine now. One thing we do know now, however, is that leadership will always play the key role when it comes to every aspect of applying the principles of war.

BIBLIOGRAPHY

- Alberts, David S., Garstka, John J., Stein, Frederick P. Network Centric Warfare – Developing and Leveraging Information Superiority. 2nd ed. (Revised). Washington D.C.: Department of Defense C4ISR Cooperative Research Program Publication Series, 1999.
- Brodie, Bernard. “The Worth of Principles of War.” From a lecture delivered 7 March 1957 to the U.S. Army Command and General Staff College, Fort Leavenworth, KS.
- Cebrowski, Arthur K., “President’s Notes.” Naval War College, Autumn, 1999.
<http://www.nwc.navy.mil/press/Review/1999/autumn/pn-a99.html>. [2 April 2005]
- _____, Garstka, John J. “Network-Centric Warfare: Its Origin and Future” U.S. Naval Institute Proceedings (Jan. 1998): 28-36.
- Clausewitz, Carl Von. On War. ed. and trans. Michael Howard and Peter Paret. Princeton, NJ: Princeton University Press, 1976.
- _____. Principles of War. ed. and trans. Hans W. Gatzke. Harrisburg, PA: The Military Service Publishing Company, 1948.
- Cranford, Teddy C. “Mental Models and Operations Other Than War” Unpublished Monograph, U.S. Army Command and General Staff College, Fort Leavenworth, KS: 1996.
- Foch, Ferdinand. The Principles of War. trans. Hilaire Belloc. New York: Henry Holt and Company, 1920.
- Fuller, J.F.C. The Foundations of the Science of War. London: Hutchinson and Company, Paternoster Row, n.d.
- Glenn, Russell W. “No More Principles of War?” U.S. Army Parameters (Spring 1998): 48-67.
- Handel, Michael I. Masters of War – Classical Strategic Thought, 3rd ed. Portland, OR: Frank Cass, 2001.
- Hattendorf, John B. “Our Naval Heritage Is In Danger”. U.S. Naval Institute Proceedings (Dec. 2004): 64-65.
- Johnsen, William J. “The Principles of War in the 21st Century: Strategic Considerations”. Unpublished Monograph, Strategic Studies Institute, U.S. Army War College, Carlisle, PA: August 1, 1995.

- Johnson-Laird, P.N., Vittorio Girotto, and Paolo Legrenzi. "Mental Models: A Gentle Guide For Outsiders." 7 April 1998. <http://www.si.umich.edu/ICOS/gentleintro.html>. [23 March 2005]
- Jonassen, David H. "Operationalizing Mental Models: Strategies for Assessing Mental Models to Support Meaningful Learning and Design-Supportive Learning Environments", n.d., <http://www.ittheory.com/jonassen2.html>. [2 April 2005]
- Litton, Leonard G. "The Information-Based RMA and the Principles of War" Chronicles Online Journal, (6 Sept., 2000), <http://www.airpower.au.af.mil/airchronicles/cc/Litton.html>, [22 March, 2005], 7.
- McDaniel, Scott. "What's Your Idea of a Mental Model?" 10 February 2003. Lkd. Boxes and Arrows. http://boxesandarrows.com/archives/whats_your_idea_of_a_mental_model.php. [23 March 2005].
- Morgan, John G., Mc Ivor, Anthony D. "Rethinking the Principles of War" U.S. Naval Institute Proceedings (October 2003): 34-38.
- "Mental Models." <http://tip.psychology.org/models.html>. [2 April 2005].
- Nowlin, David V., Stupak, Roland J. War as an Instrument of Policy: Past, Present, and Future, University Press, Lanham, MD, 1998.
- Owens, Mackubin Thomas. "Technology, The RMA, and Future War" Strategic Review (Spring 1998): 63-70.
- Piatt, Walter E. "Do the Principles of War Still Apply?" Unpublished Monograph, U.S. Army Command and General Staff College, Fort Leavenworth, KS: 1998.
- Schmidt, John W. "The Principles of War and Iraqi Freedom" U.S. Naval Institute Proceedings (June 2003): 70.
- Senge, Peter M. The Fifth Discipline – The Art and Practice of The Learning Organization. New York: Currency, Doubleday, 1990.
- _____. "Mental Models: Putting Strategic Ideas Into Practice", April 1992. <http://deming.eng.clemson.edu/pub/tqmbbs/tools-techs/menmodel.txt>, [2 April 2005].
- Slais, Thomas A. "Some Principles of Network-Centric Warfare: A Look at How Network-Centric Warfare Applies to the Principles of War" Unpublished Monograph, U.S. Naval War College, Newport RI: 1999.
- Sun Tzu. The Art of War. trans. Samuel B. Griffith. London: Oxford University Press, 1963.
- U.S. Army. Operations (FM 3-0), Washington, D.C., June 14, 2001.

U.S. Department of Defense. “Pentagon Kicks Off Effort to Re-Examine The Basic Principles of War”. Inside the Pentagon (July 1, 2004)

U.S. Joint Chiefs of Staff. Doctrine for Joint Operations (JP 3-0), Washington, D.C., September 10, 2001.

U.S. Navy. Naval Leader Development Guide 2005, Center for Naval Leadership, Norfolk, VA, 2004.

Vego, Milan N. “Naval Doctrine Must Be Flexible and Dynamic” U.S. Naval Institute Proceedings (May 2003): 74.